

ABSTRACT

A receiver desensitization system sets the sensitivity of a receiver by injecting a desensitization signal appearing as noise onto a receive path of the receiver to adjust the noise power level relative to the power level of signals on the receive path. For example, a desensitization source provides a desensitization signal appearing as noise onto a desensitization path. An adjustable attenuator on the desensitization path adjusts the power level of the desensitization signal to provide a desired level of desensitization. The desensitization path is coupled to a receive path of a receiver, and the desensitization signal is injected into the receive path. The desensitization signal desensitizes the receiver by raising the noise power level relative to the signal power level on the receive path. The desensitization signal can be injecting into the receive path after a main amplifier on the receive path. By injecting the desensitization signal after the amplifier, the desensitization system reduces the contribution to the overall noise figure that would occur if any attenuation of the signal were to occur before the input to the amplifier. Depending on the application, the desensitization signal can be injected into the receive path at the radio frequency (RF), intermediate frequency (IF) or baseband stages of the receiver. The desensitization signal can take a variety of forms, such as broadband noise, a continuous wave signal, a modulated signal, or a digital pseudo-random noise sequence.